

What is claimed is:

1. An acoustic generating device, comprising:
a piezoelectric material;
a metal diaphragm bonded to the piezoelectric material and having a nodal
5 fulcrum;
an electric circuit connected to the piezoelectric material that electrically
activates the piezoelectric material; and
mounting devices constructed of insulating material and positioned at the top and
bottom of the metal diaphragm wherein the mounting devices support the
10 metal diaphragm at the nodal fulcrum with an adhesive.

2. The acoustic generating device of claim 1, wherein the metal diaphragm is
substantially round.

15 3. The acoustic generating device of claim 1, wherein the mounting devices
are attached to the inside of a housing that at least partially encloses the acoustic
generating device.

20 4. The acoustic generating device of claim 1, wherein the electric circuit is at
least partially mounted on a circuit board that is located proximate one of the mounting
devices.

5. The acoustic generating device of claim 1, wherein one of the mounting devices is attached to the piezoelectric device with the adhesive.

6. The acoustic generating device of claim 1, wherein at least one of the mounting devices is attached to the metal diaphragm with the adhesive.

7. The acoustic generating device of claim 1, wherein at least one of the mounting devices is substantially round.

8. The acoustic generating device of claim 1, further comprising a second piezoelectric material electrically activated by the electric circuit.

9. The acoustic generating device of claim 1, wherein the piezoelectric material is ceramic.

10. An acoustic generating device, comprising:
a piezoelectric material;
a metal diaphragm affixed to the piezoelectric material and having a nodal fulcrum;
a housing that substantially encloses at least the piezoelectric material and the metal diaphragm;
an electric circuit connected to the piezoelectric material that electrically activates the piezoelectric material; and

mounting devices constructed of insulating material and positioned at the top and bottom of the metal diaphragm wherein the mounting devices support the metal diaphragm at the nodal fulcrum with an adhesive.

5 11. The acoustic generating device of claim 10, wherein the metal diaphragm is substantially a disk.

12. The acoustic generating device of claim 10, wherein the mounting devices are attached to the inside of the housing.

10 13. The acoustic generating device of claim 10, wherein the electric circuit is at least partially mounted on a circuit board that is located proximate one of the mounting devices.

15 14. The acoustic generating device of claim 10, wherein one of the mounting devices is attached to the piezoelectric device with the adhesive.

15. The acoustic generating device of claim 10, wherein at least one of the mounting devices is attached to the metal diaphragm with the adhesive.

20 16. The acoustic generating device of claim 10, wherein at least one of the mounting devices is substantially round.

17. The acoustic generating device of claim 10, further comprising a second piezoelectric material electrically activated by the electric circuit.

18. The acoustic generating device of claim 10, wherein the piezoelectric material is ceramic.

19. An acoustic generating device, comprising:
a piezoelectric material;
a metal diaphragm affixed to the piezoelectric material and having a nodal fulcrum;
an electric circuit connected to the piezoelectric material that electrically activates the piezoelectric material; and
a means for mounting the metal diaphragm.

20. The acoustic generating device of claim 19, wherein the metal diaphragm is substantially round.

21. The acoustic generating device of claim 19, wherein the metal diaphragm is rectangular with two separate nodal fulcrums on the metal diaphragm.

22. The acoustic generating device of claim 19, wherein the means for mounting comprises three or more sets of pins constructed of insulating material and positioned at the nodal fulcrum, wherein at least one set of pins opposes another set of pins and supports the metal diaphragm using adhesive.